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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,102	07/19/2001	Robert Duncan Doverspike	2000-0699	9991

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Mr. S.H. Dworetsky, AT&T Corp., Room 2A-207
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EXAMINER	
ROBERTS, BRIAN S	

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/909,102	DOVERSPIKE ET AL.	
	Examiner	Art Unit	
	Brian Roberts	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/19/2001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claims 1-11 have been examined.

Claims 12-19 have been cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bentall et al. in view of Moran et al.

- In reference to claim 1 and 2

Bentall et al. teaches a method of restoration routing optimization in a communications network that includes:

- Transmitting a restoration message from the sender node to the chooser node (Figure 11)
- Determining the spare capacity of each route (Figure 3-4)
- Receiving a message representing the spare link capacity of the links on the alternative route (Figure 9) where the plurality of nodes containing information on the restoration link capacity add information on the spare capacity of its links to the flood messages. (Column 9 lines 8-10)
- The chooser node acknowledges shortest route for each path with sufficient capacity by sending message back to sender (Figure 9)

- The chooser node uses the information contained in the flood message to select a restoration path from the sender node to the chooser node (Figure 3-4)
- Reserving spare capacity along the links for the restoration process (Figure 4, 10)

Bentall et al. does not teach receiving a message from the destination node containing an array or matrix representing a restoration link capacity needed on each link over possible failures of the service path and using the received array to select a restoration path.

In Figures 4A-4D, Moran et al. teaches a method of restoration routing in a communications network that includes:

- Sending a restoration message to the chooser node (abstract)
- The chooser node receiving a message from the sender node with a distance value contained in an array or matrix (Figure 2A) wherein the information used to compute the array is distributed among a plurality of nodes in the network along the path of the message. (40-52)
- The chooser node compares the array or matrix (Figure 2A) to the plurality of restorations messages that arrived within the predetermined time-out period (column 3 lines 20-24) (64-68)
- The sender node receiving a message from the chooser node with a distance value contained in the array or matrix (Figure 2B) wherein the information

used to compute the array is distributed among a plurality of nodes in the network along the path of the message (70-72)

- The sender node using the array or matrix (Figure 2B) to confirm the optimal alternative route (72)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the method of restoration routing optimization in a communications network that uses restoration link capacity of Bentall et al. to include the sender node receiving a message from chooser node containing an array or matrix wherein the information used to compute the array is distributed among a plurality of nodes in the network as taught by Moran et al. representing a restoration link capacity needed on each link over possible failures of the service path because such a message could contain a wide variety of information including distance values, restoration link capacity, etc. to select or confirm a restoration path through the network to the chooser node.

- In reference to claim 3

Bentall et al. teaches a system that covers substantially all limitations of the parent claims. Bentall et al. further teaches a method where if multiple failures occur, the restoration link capacity can be divided between the failures. (Column 9 lines 13-20; column 9-10 lines 53-10)

- In reference to claim 4

Bentall et al. teaches a system that covers substantially all limitations of the parent claims. In Figure 11, Bentall et al. further teaches a method of sending a message from the sender node to other nodes to amend their routing tables for destinations previously served by the failed link, to ensure that subsequent virtual paths avoid the failed part. (Column 9 lines 43-51)

- In reference to claim 5

Bentall et al. teaches a system that covers substantially all limitations of the parent claims. Bentall et al. further teaches the chooser node transmitting an acknowledgement to the tandem node to allocate some spare capacity to the virtual path, as requested by the virtual path. (Column 9 lines 27-33)

- In reference to claim 6

Bentall et al. teaches a system that covers substantially all limitations of the parent claims. In Figure 11, Bentall et al. further teaches the sender floods messages via all its neighboring nodes, to find alternative routes to the chooser node, and to pass spare capacity information on the links of those alternative routes, to the chooser node.

Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bentall et al. in view of Moran et al., as applied to the claims 1-6 above, and further in view of Chaudhuri (US 6,600,719 B1).

- In reference to claim 7 and 8

The combination of Bentall et al. and Moran et al. teach a method that covers substantially all limitations of the parent claims.

Bentall does not explicitly teach the nodes in the communications network being optical cross-connects.

Chaudhuri teaches a method and apparatus for restoring communications in an optical network where the nodes of the network can include electronic or optical cross-connects. (Column 1 lines 34-35)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the method of restoration routing optimization in a communications network as taught by the combination of Bentall et al. and Moran et al. to include the nodes in the communications network being optical cross-connects because doing so would enable the restoration routing optimization to be implemented in an optical communications network, and it is well known in the art that optical-cross connects are used at the nodes in optical communications networks.

- In reference to claim 9

The combination of Bentall et al. and Moran et al. teach a method that covers substantially all limitations of the parent claims. Bentall et al. further teaches a method wherein the communications network is a mesh network that allows for a new route to be selected from a plurality of possible routes via one or more different nodes and links than the original path to ensure that a link failure or failures between two nodes will not

result in information not being able to be transmitted through the communications network (column 1-2 lines 12-50, Figure 18)

- In reference to claims 10 and 11

The combination of Bentall et al. and Moran et al. teaches a system that covers substantially all limitations of the parent claims. Bentall et al. further teaches a method where the link capacity information is stored in the nodes of the network and adds the spare link capacity information to the message sent from the sender node to the chooser node. (Figure 10)

The Bentall et al. does not explicitly teach representing the restoration link capacity stored in master nodes to be sent in a matrix consisting of rows and columns.

Moran et al. further teaches the chooser node compares the array or matrix (Figure 2A) to the plurality of restorations messages that arrived within the predetermined time-out period (column 3 lines 20-24) (64-68)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the method of restoration routing optimization in a communications network as taught by Bentall et al. to include the rows and columns of a matrix as taught by Moran et al. used to represent the restoration link capacity to be stored in the master nodes of the network because it would allow for the capacity information of each link to be added onto the message and allow the chooser or sender node to determine the capacity of each link.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is:

- Croslin (US 5943314) teaches a system and method for establishing a restoral route to bypass multiple failed components in a communications network.
- Chaudhuri (US 6324162 B1) teaches a system and method for restoration of service upon the failure of a link connecting a pair of nodes.
- Chujo et al (US 5218601) teaches a method for searching for an alternative path in a communications network upon failure of a node or link.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Roberts whose telephone number is (571) 272-3095. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BSR

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